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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Steven M. Bennett

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EXAMINER

TO, JENNIFER N

ART UNIT

PAPER NUMBER

2195

MAIL DATE

DELIVERY MODE

01/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/663,163	Applicant(s) BENNETT ET AL.	
	Examiner JENNIFER N. TO	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-9,11-17,19,22-26,30,31,33-35,37-39,41,43-46,50,51,53 and 56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,11-17,19,22-26,30,31,33-35,37-39,41,43-46,50,51,53 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-2, 5-9, 11-17, 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56 are pending for examination.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/13/2008 has been entered.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 30-49 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

5. Claims 30-31, 33-35, 37-39, 41, 43-46 are rejected under 35 U.S.C. 101 because the claimed invention are directed to apparatus claims, but appearing to be comprised of software alone without claiming associated computer hardware required for execution. For example, claims 30, 35, 41 recited resource determinator, resource optimizer, transition type determinator, VMM operation controller, notification receiver,

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and operation performer are all software modules/functions. Software alone is directed to a non-statutory subject matter.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 5-9, 11-17, 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al (hereafter Robinson) (U.S. Patent No. 5522075), and in view of Shorter (U.S. Patent No. 5063500).

8. Shorter was cited in the previous office action.

9. As per claim 1, Robinson teaches the invention substantially as claim including a method comprising:

receiving an instruction executed by a virtual machine monitor (VMM) (col. 5, line 21; col. 12, lines 34-60);

identifying based on the instruction that a transition from the VMM to one or more virtual machines (VMs) is about to occur (col. 5, lines 21-27; col. 12, lines 34-60); and

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utilizing processor-managed resources associated with the one or more VMs based the transition (col. 10, line 54 through col. 11, line 39).

10. Robinson did not specifically teach that the transition is an initial transition.

11. However, Shorter teaches that the transition from the VMM to one or more VMs is an initial transition (col. 14, lines 47-66).

12. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of Robinson and Shorter's system because both systems suggest transition from a VMM to one or more VMs is occurred in response to a instruction and Shorter also suggested that the transition is an initial transition would improve the integrity of Robinson's system by avoiding the assignment of a VM from the pool to a conversation request involving a program thread that is dependent on the successful execution of a previous thread (col. 5, lines 10-14).

13. As per claim 2, Shorter teaches that wherein the initial transition from the VMM to the one or more VMs is a first time invocation of a VM (abstract; col. 5, lines 36-56).

14. As per claim 5, Shorter teaches that wherein the instruction executed by the VMM is VM launch instruction (col. 10, lines 39-55; col. 11, lines 9-15).

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15. As per claim 6, Shorter teaches that wherein identifying the initial transition comprises determining initial transition is about to occur by logic within a processor (abstract; col. 5, lines 36-55).

16. As per claim 7, Shorter teaches that wherein the logic within the processor is prediction logic (abstract; col. 5, lines 36-55).

17. As per claim 8, Shorter teaches that wherein utilization of processor-managed resources includes at least one of allocation of one or more processor-managed resources, de-allocation of one or more processor-managed resources, verification of data stored in one or more processor-managed resources, invalidation of data stored in one or more processor-managed resources, and loading of data into one or more processor-managed resources (abstract; col. 8, line 67 through col. 9, line 6).

18. As per claim 9, it is rejected for the same reason as claim 1 above. In addition, Shorter teaches notifying the processor of the initial transition (col. 14, lines 59-66).

19. As per claim 11, Shorter teaches that wherein the initial transition is an initial transfer to the VM (col. 14, lines 47-66).

20. As per claim 12, Shorter teaches allocating a memory region for a new virtual machine control structure (VMCS) associated with the VM, and requesting the processor to activate the new VMCS (col. 11, line 66 through col. 12, lines 22).

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21. As per claim 13, Shorter teaches that wherein requesting the processor to activate the new VMCS comprises executing a VMCS pointer load instruction including a pointer to the new VMCS as an operand (col. 12, line 66 through col. 13, line 11).

22. As per claim 14, Shorter teaches that requesting the processor to initialize the new VMCS (col. 11, lines 9-18).

23. As per claim 15, Shorter teaches that wherein requesting the processor to initialize the new VMCS comprises executing a VMCS clear instruction including the pointer to the new VMCS as an operand (col. 8, line 59 through col. 9, line 26; col. 13, lines 12-20).

24. As per claim 16, Shorter teaches upon requesting the processor to activate the new VMCS, requesting the processor to set execution control information, VMM state information and VM state information in the new VMCS (col. 11, lines 9-18).

25. As per claim 17, Shorter teaches that wherein requesting the processor to set execution control information, VMM state information and VM state information in the new VMCS comprises executing a VMCS write instruction having an operand that identifies a component of the new VMCS to which data is to be written (figs 6A-6B, 7; col. 11, lines 9-18).

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26. As per claims 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56, they are rejected for the same reason as claims 1-2, 5-9, and 11-17 above.

Response to Arguments

27. Applicant's arguments with respect to claims 1-2, 5-9, 11-17, 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56 have been considered but are moot in view of the new ground(s) of rejection.

28. It is also noted that applicant argued that claims 30-31, 33-35, 37-39, 41, and 43-46 are directed to a statutory subject matter.

29. Examiner respectfully disagreed with applicant argument with respect to claims 30-31, 33-35, 37-39, 41, and 43-46 under 35 U.S.C 101. Applicant pointed out Figs. 2 and 9 to support the apparatus of claims 30, 35, 41 are including specific hardware components that contain hardware components for performing steps. However, examiner is unable to find any of the hardware components in Figs. 2 and 9. In addition, the claimed did not claim the hardware components. Applicant is reminded that examiner interpret the claims in light of the specification. Thus claims 30-49 recited a apparatus contained only software modules. Software alone is directed to a non-statutory subject matter.

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Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see attached PTO 892 form for details).

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER N. TO whose telephone number is (571)272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM, F 6AM- 2:30 PM.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VAN H NGUYEN/
Primary Examiner, Art Unit 2194

/Jennifer N. To/
Patent Examiner
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